The South African Journal
of
Medical Laboratory Technology

ORGAN OF THE SOCIETY OF MEDICAL LABORATORY
TECHNOLOGISTS OF SOUTH AFRICA

Vol. 7 No. 1. A QUARTERLY March, 1961

Single Numbers 55 cents Annual Subscription R2.10

Printed by Provincial Printing Co. (Pty.), Ltd., 482 Smith Street, Durban, and published by the Society of Medical Laboratory Technologists of South Africa, c/o Central Pathological Laboratory, Private Bag, Jacobs, Natal.

SUBSCRIPTIONS

To:

The South African Journal of Medical Laboratory Technology,
c/o Central Pathological Laboratory, Private Bag, Jacobs,
NATAL.

Please enter / renew my subscription to the Journal for ..... year(s).

I enclose ..... in payment.

Signature .....

Address .....

.....

The South African Journal

of

Medical Laboratory Technology

ORGAN OF THE SOCIETY OF MEDICAL LABORATORY TECHNOLOGISTS OF SOUTH AFRICA

Vol. 7. No. 1. A QUARTERLY March, 1961

CONTENTS

CURRENT AFFAIRS

We read rather too frequently these days, of "break-aways", break-away provinces being the most common. We, Medical Technologists in South Africa, are now faced with our own such problem.

The recently formed Association of Blood Transfusion Services is now in the process of establishing Diploma and Fellowship courses for technologists who are employed in the various blood transfusion laboratories. This step, following so closely upon the gazetting of the revised regulations in March 1960, is a little suspect in the eyes of those medical technologists who have striven for the last ten years to establish National Diplomas in the subjects relating to Medical Technology. In fact we published the syllabuses as recently as September 1960.

The syllabus for "the subject Blood Transfusion Technology in the Final Examination for Medical Technologists" was drawn up with the advice and co-operation of the Medical Director of one of the Services concerned and we can see no good reason why their laboratory staffs should be advised to concentrate on the new, limited courses, at the expense of the official course. These two streams must not be allowed to develop in opposition to each other. It would be to the advantage of the career blood transfusion technologists to hold both the National Diploma in Medical Technology (Blood Transfusion Technique) and one or both of the Association's Diploma and Fellowship Certificates, but where this would entail hardship we would suggest that the National Diploma would be of more value than a newly instituted, parochial one.

It is obviously desirable that the subject be taught at all levels by competent and highly trained specialists in the fields and a spirit of co-operation would enable the blood transfusion workers to be trained in the basic routines required for the Intermediate Examination and for those in clinical laboratories to be taught blood transfusion techniques.

So far as the Society is concerned it is the mouthpiece of Medical Technologists in South Africa and we would ask the blood transfusion technologists to support it in its endeavours to provide the status concommitant with first-class qualification and to bring their problems to us. If a slight change in the constitution of the Society is required then let us investigate the matter at once.

There is still a great deal of truth in the motto

"*Ex unitate vires*"

A CASE OF c (hr′) IMMUNIZATION

V. F. HIGGS and F. A. WARD
Natal Blood Transfusion Service, Durban

THE RHESUS ANTIBODY which is known as anti-c (anti-hr′) was first discovered by Levine and Javert in the early 1940's. It was later fully described by Race and Taylor who were working with a much more powerful serum.

It has a place of special interest in the history of the Rhesus system because it was by recognising the antithetical reactions of anti-C and anti-c that Fisher supposed that the genes which determine these antigens are allelic. This led to a new view of the Rhesus system, to the prediction of the existence of other Rhesus antigens, and finally to his well-known theory of Rhesus inheritance.

Anti-c is the antibody which discloses the fourth most antigenic of the Rhesus antigens, the order being D, E, C, c, e, d. It sometimes occurs alone and sometimes in association with anti-E. Thus of 2,274 sera from the mothers of erythroblastotic babies; van Laghem, Bakx and Klomp-Magnée found eight which contained anti-c alone and three which contained anti-c in association with anti-E. The antibody is produced only by c negative people and usually by the type CDe/CDe (Rh_1 Rh_1).

Anti-c is a useful antiserum in determining the probable zygosity of a D positive person. Thus if the red cells of a D positive person fail to agglutinate with anti-c he is probably homozygous in regard to D. If, on the other hand, his cells do agglutinate with anti-c, he is probably heterozygous in regard to D, but in this instance the probability is not so great. Thus anti-c (anti-hr′) is used to distinguish between CDe/CDe (Rh_1 Rh_1) and CDe/cde (Rh_1 rh) and between Cde/Cde (rh_1 rh_1), and Cde/cde (rh_1 rh).

On the 28th June, 1960, a European woman of group A, Rhesus positive, was transfused with two pints of group A, Rhesus positive blood. The crossmatch was performed by the saline, albumin replacement and indirect Coombs techniques. The patient received the transfusion well.

On the 4th July, 1960, a further blood transfusion was required but on this occasion some difficulty was experienced in finding compatible blood. Only three out of eight group A, Rhesus positive donor specimens were compatible. Six group A, Rhesus negative donor specimens proved to be incompatible.

In an effort to identify the offending antibody, the following procedures were carried out.

1. A specimen of the original donor blood given on 28th June, 1960, was now crossmatched against the patient's serum and

was found to be incompatible. It was thus concluded that this antibody arose as a result of immunization by the first transfusion.

2. Further grouping of the patient showed her to be of Rhesus group CDe/CDe (Rh_1 Rh_1).
3. Further grouping of the compatible specimens showed them to be CDe/CDe (Rh_1 Rh_1).
4. Further grouping of the original donor specimens showed one to be CDe/cde (Rh_1 rh) and the other to be CDe/CDe (Rh_1 Rh_1).
5. The patient's serum was then crossmatched against three c (hr′) positive specimens, all of which it agglutinated, and two c (hr′) negative specimens, neither of which was agglutinated.

From these observations, it was concluded that this antibody, which was warm and incomplete, was specific for the c (hr′) factor, although owing to the fact that CDE/CDE (Rh^Z) cells were not available, the possibility of an anti-E in addition could not be excluded. This, however, is improbable as the original donor blood did not contain the Rhesus factor E (rh″).

Immunization against the Rh factor c (hr′) could be avoided if all recipients and all donors were grouped in regard to this factor and the homologous blood given. This however, would involve the use of large amounts of the rare antiserum anti-c (anti-hr′) and in view of the rarity of the occurrence of immunization against c (hr′) the expense would not be justified.

The situation is analogous to a previous case reported in this journal where a recipient was immunized against the M antigen.

This case again underlines the fact that blood issued from a bank though compatible in that it does not contain anitgens against antibodies in the recipient's serum, may be incompatible in that it may immunize the recipient against a foreign antigen.

Thanks are due to Dr. Tanchel, Medical Superintendent, Addington Hospital, Mr. Renton and Dr. Allen.

CLOCK-WATCHING IN THE LABORATORY

F. A. BRANDT

O. & M. Department, S.A.I.M.R., Johannesburg

THE TITLE of this article should not be misinterpreted because the type of clock-watching most commonly found in medical diagnostic laboratories applies to the half hour before tea, lunch time or going home. What the title does imply is the accurate assessment of laboratory work loads in terms of time.

Work study is not something new, it is as old as industry itself. The first man who succeeded in simplifying his job by the use of his reason can be considered the unconscious founder of Work Study. Until very recently, however, work study remained the unconscious tool of management. The earliest attempt at timing production was made by Perronet in 1760, who found that 12,000 pins of a certain type took 24.3 hours to manufacture. In 1830 Babbage carried out similar studies in an attempt to improve factory production.

Not until 1890 did the pattern of modern method and work studies appear when Taylor investigated the work content of a job and from that established definite time standards. He was the first person to break down a job into elements because he realized that the overall time told one relatively little and gave no indication where time was being wasted or being used inefficiently. He also realized that any particular study cycle must be repeated a number of times if any degree of accuracy were to be obtained.

The founders of modern motion study works were Frank and Lilian Gilbreth (1869-1924). Frank Gilbreth found, when learning the bricklayer's trade, that no two operators used the same technique, nor did the operator use the same method as the one which he endeavoured to teach the apprentice. He studied the process in detail so that the most efficient method of laying bricks could be found. Subsequently, by applying the methods now known as Method Study, he reduced the number of operations in laying bricks from 18 to 5 and increased the average output from 120 to 350 bricks per hour per person.

From brick-laying Gilbreth extended his studies into a variety of procedures (ably assisted by his wife, who was a trained psychologist) until he was able to define motion study as "dividing work into fundamental elements, analysing these elements separately and in relation to one another; and from these studied elements, when timed, building methods of least waste."

In addition to the motion study work, the Gilbreths investigated the problem of fatigue and postulated the three principles whereby

needless fatigue could be eliminated, viz. (*a*) Lightening the load, (*b*) introducing rest periods and (*c*) spacing the work.

In 1911 Bedaux made an important contribution to modern work study procedure by the introduction of a rating factor, which will be dealt with more fully later.

Time and motion studies were originally applied to industry, especially in America but it soon became evident that the basic principles could be applied to *any* type of human activity.

In 1956 the principles outlined above were applied to laboratory work in the South African Institute for Medical Research with certain modifications and additions which were necessary, because laboratory work differs in some important ways from industry or factory production.

The method used may be summarized briefly as follows:

Time studies on any operation or laboratory test are preceded by method studies. If, for example, the overall time for a histopathological examination of tissue is required, the complete sequence of events from the receipt of the specimen to the issue of the report must be noted in detail. The "flow of work" study is essential because no critical evaluation of the procedure as a whole can be made without it. The elimination of unnecessary delays, ineffective movements or unsatisfactory placing of equipment is made possible by the method study. Method studies inquire into the purpose, place, sequence, and means employed for the job.

When the method used for a test has been established, the work performed is broken down into elements. Some laboratory procedures are readily broken down into elements, others need careful scrutiny to show the best division. In the case of the example quoted above, the elements of a histopathological examination may be divided into receipt of specimen, recording of particulars in a register, fixation, selection of suitable blocks of tissue for processing, the processing itself, embedding, trimming and mounting of tissue blocks, cutting, staining and the actual diagnostic work. This principle is applied to all tests and with experience the investigator is able to separate the elements of a sequence rapidly and effectively.

Time studies are then performed on each of the elements of the test. The time is taken by means of a flip-back type of stopwatch, recorded in seconds on a special time study sheet and after several readings have been obtained the average actual time is calculated for each element. The sum of the average actual times of the elements constitutes the actual time for the complete procedure.

It is obvious that the actual time recorded for any procedure will vary from person to person, depending on the experience, concentration, manual dexterity and efficiency of the performer. For this reason the

GE

DU

For further details write to:

OPTICAL INSTRUMENTS (PTY.) LTD.

Sole S.A. and Rhodesian representatives:

Johannesburg
P.O. Box 1561

Cape Town
P.O. Box 4051

JENA[ER] GLAS

JENA GLASS®

ÆTEGLAS 20 is a borosilicate glass which has the highest resistance to water and acids in comparison with all known laboratory glasses. It possesses superior resistance to attack of lye; therefore, apparatus for micro and precision analyses is best made from Geraeteglas 20 in order to avoid contamination or supplementary reactions. Geraeteglas 20 possesses excellent stability to sudden heating and cooling because of its high resistance to temperature changes. It is also remarkable for its hardness against scratching. For 40 years it has remained unsurpassed as the universal glass of the chemist.

AN 50 is a pure borosilicate glass, chemically resistant and with lowest thermal expansion. It has highest resistance to temperature changes and is known as one of the best types because of its hydrolictic stability and resistance to acids. DURAN 50 can be fused with other glasses of the same type, without stresses; it can be worked with them and annealed at similar temperatures. DURAN 50 is easily to handle from a glass blowing point of view. It is best suited for the production of utensils with thick walls and for complicated laboratory apparatus which are subject to unusually high mechanical and thermal stresses, JENA GLAS DURAN 50 is also most suitable for making apparatus for large technical plants in the chemical industry.

® Internationally registered trademark

WERK SCHOTT & GEN. MAINZ

rating system of Bedaux is applied which takes into consideration the speed and efficiency of the worker. Any work done at a normal speed and with a normal degree of efficiency, capable of being sustained for a long period, is allocated a rating factor of 60. A highly efficient, fast worker may be rated at 80 or 90 whereas a slow, inefficient worker may only reach 40 or 50.

The stopwatch or actual time for a job is multiplied by the rating factor in order to obtain a normalized time and if the rating factor is correct then the normalized time will be the same for all workers doing a particular test. In other words, the normalized time is the corrected time for a particular work and represents the average.

Much criticism has been evoked by the rating system because "normality" is notoriously difficult to define and depends on a personal assessment of the worker's speed and efficiency. In practice, however, it is surprisingly accurate, provided the observer has an intimate knowledge of the work done and a sufficiently large number of observations are recorded for each element. Futhermore, it is generally accepted in work studies that neither the extremely fast and efficient worker, nor the person who needs a calendar instead of a stopwatch to time his work, should be used in obtaining the normalized time.

I have often been asked the question, "How do you rate a person who is thinking?" This unusual contingency is met by simply looking into the eyes of the operator and if the signs are positive a suitable upward adjustment of the rating is made!

No person can or should maintain the rate of performance as indicated by the normalized time and therefore certain allowances are made. The first allowance is termed a compensatory rest allowance and is designed to give each worker a short breathing space while doing a particular piece of work. The second allowance has been allocated to take care of unusual contingencies which may arise during the course of the day's work. In the studies performed in the Institute 20% of the actual time has been added as rest and contingency allowances.

The allowed time for a test (actual normalized time plus allowances) is expressed as a time unit, which may be in minutes or in multiples of minutes. For example, if a 5-minute interval is accepted as being one Time Unit, then a test requiring 750 seconds to complete will be equivalent to 2.5 units.

Management usually prescribes working hours in any organisation and in medical diagnostic laboratories this rule applies too. In most industries working hours are calculated on a weekly basis, e.g., 44 hours per week. In medical diagnosite laboratories, hours of duty are often more flexible but a certain minimum requirement is laid down and the gross available time is therefore easily calculated per person per month. This time is subject to certain allowances such as Sundays and holidays,

annual and accumulated leave, tea breaks, lunch breaks and any other time off duty agreed to by the management. The true or actual available time per person per month is calculated at 131½ hours.

From the number of tests performed in any laboratory, the allowed time as calculated, the true available time per person and the number of persons engaged on the particular test, the occupancy of the staff may be calculated. Occupancy is usually expressed as a percentage of the available time and indicates what value is received in productivity of the staff as far as the time element is concerned. It is generally accepted that 75 to 80% occupancy is satisfactory. High occupancy trends are corrected by employing additional staff whereas low occupancies obviously require a re-organisation of staff allocations.

The unit-value for a test does not include the cost of materials, nor the multiplicity of indirect laboratory charges applicable to all organisations but it nevertheless affords a most useful method for controlling laboratory costs because the greatest single factor in laboratory costs is salaries and wages.

Time, therefore, costs money.

A RACK FOR STAINING BATCHES OF SMEARS

N. EMERSON, M.SC., PH.D.

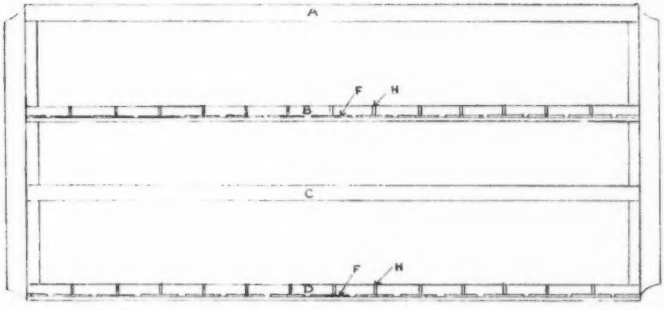
Bacteriology Department
South African Institute for Medical Research,
Port Elizabeth Branch

DURING the past few years we have used a staining rack designed in this department, and illustrated in the accompanying figure. This has proved very time-saving when large batches of smears are to be stained, for instance by the Ziehl-Neelsen method. We examine up to three hundred sputum specimens daily for the presence of *Mycobacterium tuberculosis*, and our procedure is briefly as follows: The sputum is concentrated and smears are made on microscope slides; they are fixed and dried by heat from infra-red lamps and stained by the Ziehl-Neelsen method.

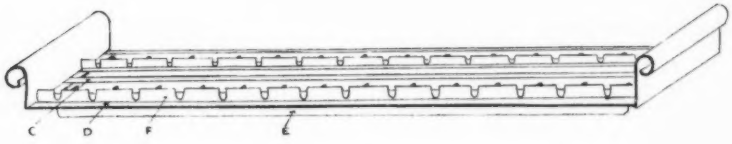
This procedure entails a considerable amount of time if the slides are to be handled individually. For this reason the rack which holds twenty-eight slides was designed. As each smear is made the slide is placed on the rack and is not removed while being fixed, stained and dried. The staining sink is made of stainless steel and has a metal strip one and one quarter inches high along each of the longer sides. The curved

ends of the racks fit over these strips, so that when in position, they lie side by side across the sink.

The rack made of stainless steel (18 guage) is sixteen and one half inches long by six and three-quarters of an inch wide. It has four strips



TOP VIEW



SIDE VIEW

three-quarters of an inch in width and holds two rows of fourteen slides. A slide rests on two strips (A and B or C and D), each pair is separated by a space of one and three-eights of an inch. Alternate strips have a ridge (F) one quarter of an inch high, to stop slides from falling off the strips.

This ridge is notched opposite each slide to allow water and stain to run off when the rack is tilted. The slides are kept separate from each other by small partitions (H) one quarter of an inch high, fixed on to the strips. The rack, is kept flat and rigid by half-inch steel strips (E) fixed at right angles underneath the slide supports (A, B, C, D).

I am deeply indebted to Miss E. M. Burnett for the painstaking drawings.

A DIFFICULTY IN BLOOD GROUPING

E. A. SMART and F. A. WARD
Natal Blood Transfusion Service, Durban

RECENTLY a specimen of blood was received at this laboratory for grouping and cross-matching. The results obtained for the ABO and Rhesus grouping are shown as follows:

anti-A	anti-B	O serum	A cells	B cells	anti-D
—	—	—	3+	3+	4+

In the light of these clear-cut results the patient was said to be of group O, Rh positive and a group O, Rh positive donor blood was selected for cross-matching. The cross-matching test revealed no incompatibility by either the saline, indirect Coombs, albumin replacement or bromelin techniques, and the blood was therefore issued.

After the patient had received about 170 ml. of this blood she had an attack of chills, flushing of the face, a feeling of constriction in the chest, and thirst. The transfusion was discontinued and the donor blood together with a further specimen of the patient's blood was returned to the laboratory for investigation.

On re-grouping the pre-transfusion specimen of blood, the following results were obtained,

anti-A	anti-B	O serum	A cells	B cells
2+	—	2+	3	4

but when the tubes were shaken or placed in a water bath at 37°C., the reaction became,

anti-A	anti-B	O serum	A cells	B cells
—	—	—	3	4

This was similar to the original pattern.

At this stage it was concluded that the patient was of group A, that the A antigen was very weak and that she possessed a strong anti-A in her serum. That the cross-matching tests detected no incompatibility between the patient's serum and the donor's cells was no cause for speculation as the donor cells were of group O. The clinical reaction, however, remained unexplained hence it was decided to titrate the donor plasma to see if it contained a high concentration of anti-A. Such seemed to be the only possible serological explanation for the reaction. On titration however, the donor plasma proved to be of low titre in regard to anti-A.

The clinician in charge of the case was then consulted with a view to establishing an alternative cause for the patient's condition. On

reviewing the case he felt he could ascribe the chills to the fact that the patient was having an abortion and that it happened to be a cold day. The thirst was due to her being deprived of water for some time prior to her operation. The flushing of the face remained unexplained.

This case illustrates a number of important points in immunohaematology. In particular, it illustrates the capital difficulty of identifying certain group A's. In this case the major group indicated O and this was confirmed by the minor. It was thus reasonable to regard the patient as O. Regarding the patient as O and issuing her with group O blood was also the safest thing to do. To have given her her homologous group A would have been to invite complications from the anti-A in her serum. Furthermore, difficulty would have been experienced in finding a suitable group A.

Had this patient however, been a donor the problem would have been different and much more serious. She might have been grouped as an "O" and her blood might thus have been given to a group O recipient.

To overcome this problem, two solutions were suggested. The first is the use of a highly avid immune alpha in the routine grouping of all donor specimens. A serum containing such an antibody was used by various techniques in the present case. Although it gave positive results where ordinary anti-A gave negative results there was little to choose between it and "O" serum. The second suggested solution was the use of A_2 cells in the minor group. We have never known A_2 cells to be agglutinated by the anti-A which occurs occasionally in the serum of weak group A's, even when this antibody is capable of giving a 3+ reaction with A_1 cells. Experiments along these lines are continuing, but in the meantime, in the light of our past experiences, we recommend this indirect method for the solution of this difficult blood grouping problem.

OBITUARY

MURIEL HERD
Died 8th January, 1961
Age 22

THE NATAL BRANCH was shocked to learn of the death of Muriel Herd in an unfortunate accident whilst swimming in a river near Durban.

Muriel completed her training in 1960, completing the last part of her final examinations in November of that year and was on the staff of the Laboratory at Addington Hospital, Durban, where her interest in and knowledge of haematology had made her an invaluable worker. Her loss is keenly felt by the staff of that laboratory.

To her parents, her brothers and her sister the members of the branch offer their deepest sympathy.

BOOK REVIEWS

Chromatographic and Electrophoretic Techniques. Volume I and Volume II. Edited by Ivor Smith, B.SC., PH.D., F.R.I.C. Second Edition. William Heinemann. Medical Books Ltd., 15-16 Queen St., Mayfair, London W1. Price: Vol. I: 65s. 0d.; Vol. II: 30s. 0d.

The second edition of this most valuable text on the practical aspects of Chromatography in virtually all fields in which this technique is employed now appears in two volumes. Volume I is devoted to chromatographic techniques and has been revised and added to and incorporates advances into new fields since the appearance of the 1st edition, two years ago. The excellent standard achieved in the first edition has been maintained and the present addition will doubtless add to the general usefulness of the text. It would be presumptuous for a single reviewer to comment on all fields covered in this book, but judged by the excellence of the chapters dealing with the chromatographic techniques commonly employed in Chemical Pathology, the editor has indeed rendered an outstanding service and discharged it with competence.

The major interest in the second edition is the appearance of Volume II which deals with electrophoretic techniques. In this section low voltage paper electrophoresis, cellulose acetate, agar gel, starch block, starch gel, sponge rubber, high voltage paper electrophoresis and continuous electrophoresis are dealt with. The attention to practical detail is invaluable and references adequate. Any person with any experience in any of the fields covered will doubtless appreciate the excellence of the presentation and have the utmost confidence in consulting this work when new ground is broken.

The text is doubtless a must in any Laboratory employing chromatographic and electrophoretic techniques. It is quite impossible to overstate its value.

S.M.J.

Tools of Biological Research (second series, 1960). H. J. B. Atkins (Ed.) Blackwell Scientific Publications. Oxford. Price: 37s. 6d.

Most of us, whilst browsing through current literature, must have longed for a review of the many and varied methods which would be couched in language understood by the non-specialist in the particular field.

Here is such a book.

The contributors have covered such fields as Electro-encephalography, Fluorescent antibody techniques, Paper Chromatography, the Ultracentrifuge and a number of others and the methods used, scope and potentialities are discussed in an eminently readable fashion.

The first series, published in 1959, was reviewed in Vol. 6, No. 2 of this Journal and the two together make worthwhile reading for those interested in the scientific world around them.

G.W.W.

Atlas of Medical Mycology by Moss, E. S. and McQuown, A. L. 2nd Edition. Williams and Wilkins Co., Baltimore, 1960.

In recent years there has been a considerable revival of interest in the fungal diseases of man. Such infections are being more commonly recognised than formerly and their increased incidence, perhaps largely the result of antibiotic therapy, has resulted in a greater awareness of their existence by clinicians.

The Atlas of Medical Mycology by Moss and McQuown has now appeared in a second edition. It covers the common fungal infections of man and illustrates both the clinical and mycological aspects of each condition. However, the quality of the reproductions varies. In general those dealing with the clinical features are good but a number of the photomicrographs and many of the black and white reproductions of colony forms are of little help for identification purposes. The final section, however, contains some good colour photographs.

The text has been reduced to a minimum but should prove adequate for most purposes. However, one reads with some astonishment that . . . "The occurrence of mucormycosis in uncontrolled diabetes with its increased glycogen and glucose level is natural".

The price of eleven U.S. dollars may appear unduly high.

K.C.W.

Section Cutting in Microscopy. H. F. Steedman. Blackwell Scientific Publications Ltd., 24-25 Borad St., Oxford. 20s. 0d.

Here is a book which covers the pitfalls of section cutting in a manner which should appeal to medical technologists both senior and student in histopathology departments.

It deals with infiltration media, wax types, embedding methods and section cutting, and there is a well-illustrated chapter on microtomes and knives. The text is completed by a short chapter on difficult objects and a glossary of terms.

The work covers very fully the techniques of manual processing of tissues but mechanical processing devices which play an ever-increasing part in the busy laboratory are dismissed in a few short lines as are vacuum and pressure embedding. The chapter on frozen sections would

also have been more complete had mention been made of cold chamber (cryostat) techniques. Notwithstanding these omissions this book is a valuable addition to the histology bookshelf.

G.W.W.

EXAMINATION RESULTS

THE FOLLOWING student members have completed the requirements of the examiners and become eligible for Registration:

Durban:

Boisson, Jennifer Clare.
Dick, Mavis Nøreen (Chem. Path., Haem., Hist.)
Dukes, Heather Hazel (Bact., Para., Haem.)
Herd, Muriel Ellen (Haem., Para.)
Jacobs, Louisa Johanna Elizabeth (Hist.)
Liljestrand, Siri Karin
Smith, Sheila Alison Sands (Par.)
Te Riele, Helma Theodora

Cape Town:

Bompal, P. (Chem. Path.)
Ford, Miss D. A.
Lambrick, S. R.
Law, Miss N. M. (Bact., Haem.)
Stock, Miss D. L.

Brackets indicate subjects passed with distinction during the qualifying course.

No results have been received from the Transvaal at the time of going to press.

BRANCH NEWS

NATAL BRANCH

At a recent small ceremony the following prizes were awarded:

Intermediate: Donated by the Branch chairman, Mr. G. W. Wikeley: Miss S. WESTON

Chemical Pathology: Donated by Dr. H. D. Tonking, Chief Pathologist, Natal Provincial Administration: Miss M. N. DICK

Histopathology: Donated by Dr. F. A. Ward, Natal Blood Transfusion Service: Miss L. JACOBS

Parasitology: Donated by Dr. R. Elsdon-Dew, Director, Institute for Parasitology, Durban: Miss S. A. S. SMITH

Dr. Elsdon-Dew, President of the Society, presented the prizes.

MICROSCOPE ODDITIES No. 1

Plate I

in the series of plates "De historia microscopii tabulae XVIII"
being issued at indefinite intervals
and dedicated to their friends by WILD Heerbrugg Limited,
Heerbrugg/Switzerland

Two small compound microscopes for investigations with incident light presumably of the type Galileo's instruments; the larger microscope, with cardboard tubes, 17th century, while the smaller one, constructed entirely of brass, dates from the beginning of the 18th century. Focussing by moving the tube in the sleeve connected with the tripod and by altering the distance between the eye-lens and objective. (Museum for the History of Natural Sciences, Florence.)

NOTICE TO CONTRIBUTORS

All contributions are to be addressed to:—The Editor, The South African Journal of Medical Laboratory Technology, c/o Central Pathological Laboratory, Private Bag, Jacobs, Natal.

Contributions may be written in English or Afrikaans, and should preferably be typed in double-spacing on foolscap sheets on one side of the paper only.

Figures should be drawn in Indian ink, and all figures and tables should be labelled as such (e.g. Figure 1, Table 1, etc.).

Authors should make adequate references to previous works on their subjects. These should be set out as follows:—Author's surname and initials of Christian names; the year of publication (in parentheses); the name of the journal, which should be abbreviated according to the World List of Scientific Periodicals (see below); the volume number (underlined); and the first page reference.

Example:—Moron, I. B. (1960). *J. unsuccess. Med.*, 20, 99. References to books should give the author's name and initials, the year of publication, title of book, name of publisher, and town in which published.

References should be arranged in alphabetical order of the authors' surnames. If more than one work by the same author is listed, these should appear in chronological order.

Technologists are reminded that regulations demand that all original articles of a technical or scientific nature must be approved by the heads of their departments before being submitted for publication.

Title abbreviations according to World List of Scientific periodicals

All nouns commence with capital letters, and adjectives small letters. Articles, conjunctions and prepositions are omitted.

Examples:—

J. Amer. med. Ass.	*S. Afr. J. clin. Sci.*
Lancet	*Stain Tech.*
Amer. J. clin. Path.	*J. Bact.*

REPRINTS AND PHOTOGRAPHS

If requested before publication, 24 reprints of original articles will be supplied free to contributors. As a temporary measure, contributors are asked to defray the costs of publishing diagrams and photographs accompanying articles.

KENNISGEWING AAN INSENDERS

Alle bydrae moet as gevolg geadresseer word: Die Editeur, Die Suid-Afrikaanse Joernaal van Mediese Technologie, Sentrale Patologielaboratorium, Jacobs, Natal.

Bydrae mag in Engels of Afrikaans geskryf word en moet verkieslik getik wees, dubbel spasiering op folio papier en net op een kant van die vel.

Figure moet in Indiese ink geteken word en al figure en tabelle moet genommer word as sulks (b.v. Figuur 1, Tabel 1, ens.).

Outeurs moet voldoende referensies gee tot vorige werke oor hulle onderwerpe. Die moet as volg uiteengesit word:—Outeur se familienaam en voorletters; die jaar van uitgawe (in hakies); die naam van die joernaal, wat moet verkort volgens die Wêreld Lys van Wetenskaplike Tydskrifte (sien hieronder) die volume nommer (onderstreep); en die eerste pagina referensie.

Voobeeld:—Moron, I. B. (1960). *J. unsuccess. Med.*, 20, 99. Referensies tot boeke moet die outeur se naam en voorletters meld, die jaar van uitgawe, titel van boek, naam van uitgewer, en stad waar dit gepubliseer is.

Referensies moet in alfabetiese orde, volgens outeurs se familiename gerangskik word. Indien meer as een werk deur dieselfde outeur gemeld word, moet dit in tydsorde voorkom.

Tegnoloë word daaraan herinner dat regulasies vereis dat alle oorspronklike artikels van tegniese of wetenskaplike aard moet die goed euring dra van hulle departementale hoofde voor dit ingestuur word vir publikasie.

Titel verkortings volgens Wêreld Lys van Wetenskaplike Tydskrifte

Alle selfstandige naamwoorde moet begin met hoofletters en byvoeglike naamwoorde met klein letters. Artikels, verbindings, en voorsetsels word uitgelaat.

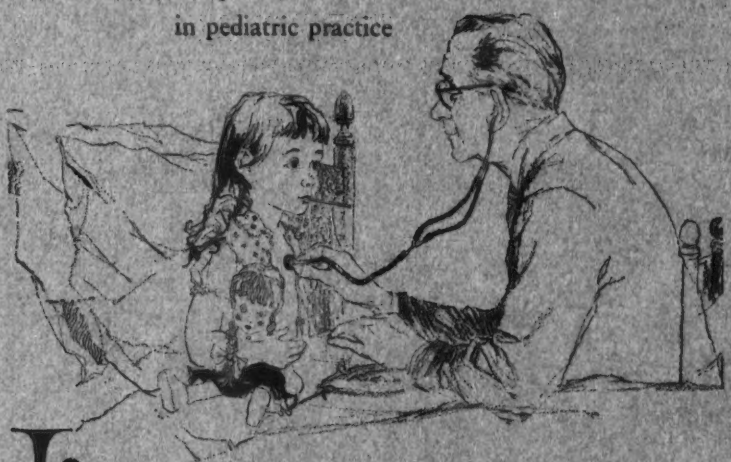
Voorbeelde:—

J. Amer. med. Ass.	*S. Afr. J. clin. Sci.*
Lancet	*Stain Tech.*
Amer. J. clin. Path.	*J. Bact.*

HERDRUKKE EN FOTOGRAWE

Indien aanvraag ingedien word voor publisering, sal 24 herdrukke vaa oorspronklike artikels vry aan beydraers verskaf word. As 'n tydelike maatre l word bydr ers gevra om die koste van publisering van fotos en tekeninge wat saam met artikels gaan self te betaal.

a new antibiotic promise
in pediatric practice



LEDERMYCIN SYRUP

Demethylchlortetracycline

Lederle

Greater therapeutic potency — with lower drug intake

In its new cherry-flavoured *syrup* form, LEDERMYCIN Demethylchlortetracycline *Lederle* is ideally suited for the pediatric patient. Because of its greater stability in acid and alkaline body fluids and its resistance to degradation, LEDERMYCIN maintains a constant, high level of antibacterial activity in the blood serum. Thus, it exerts an uninterrupted, sustained suppressive action against pathogens.

This sustained, high level of activity continues for 24 to 48 hours after discontinuance of the dosage, providing an "extra day" of protection against relapse, due to its low rate of renal clearance.

Administered to 309 pediatric patients with various infections, LEDERMYCIN Demethylchlortetracycline *Lederle* was effective in 75 per cent.[1]

LEDERMYCIN SYRUP

Demethylchlortetracycline

Administration and Dosage: 6 to 12 mg. per kilo daily, in four divided doses.
Packages: 75 mg./5 cc. tsp., in 2 fl. oz. bottles

Also available: Capsules — 150 mg., bottles of 8, 16 and 100
Pediatric Drops — 60 mg. per cc., dropper bottles of 10 cc. and 20 cc.

Reference:
[1]Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T., Tokyo, Japan. Antibiotics Annual 1959-1960, Antibiotica Inc., New York 1960, pp. 433-439.

LEDERLE LABORATORIES

Cyanamid International · A Division of American Cyanamid Company · 30 Rockefeller Plaza, New York 20, N. Y.

Sole S.A. Distributors: Alex Lipworth Ltd., Johannesburg, Cape Town, Durban and Salisbury, S.R.

403